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FROM LUXURIES TO COMMODITIES: The Nature of Mediterranean Bronze Age Trading Systems

Andrew and Susan Sherratt

No archaeologist working in the Aegean can have any doubt that facts do not speak for themselves: observations, whether typological or isotopic, need to be placed in a wider framework of interpretation before they acquire an accepted meaning. The nature of early trading activity is an outstanding example of this kind of problem. Not only must specialists agree on attributions, contexts, and dates, but prehistorians and historians must choose between radically different conceptions of how ancient societies worked and what motivated their activities. Even when the observations are not in dispute, there are major differences of opinion when archaeologists come to discuss the sociological significance of their information on ancient trade. In this paper we attempt to outline some of the reasons for the existence of these different schools, and to suggest an appropriate perspective from which to view the evidence of inter-regional contacts in the later Bronze Age Mediterranean.

The question as to whether external trade (in some sense of the term) was an important factor in the rise and maintenance of urban states and civilisations has received a variety of answers, both from archaeologists and theoreticians. The pendulum of accepted opinion has swung to both extremes: archaeologists working in the Aegean have espoused both maximum and minimum viewpoints. In the early years of this century, north-west European (and especially British) writers still tended to interpret the affairs of the ancient world in terms of their own experience as great sea-powers, encouraged both by the example of 5th century Athens and the more shadowy accounts of the Thalassocracy of Minos. Greek settlements abroad (*apoikiai*) were seen as "colonies", to be recognised from exported pottery or tomb types even where there was no textual record of such foundations. It was natural to project this picture backwards to describe Cretan "commercial wealth" and the foundation of "colonial settlements" on the mainland, or to imagine that "Cretan sea-power completely dominated Aegean commerce with Egypt". Slowly, however, Max Weber's picture of the ancient economy as essentially agrarian, and dominated by political rather than economic motives, gained ground. The "commercial" viewpoint was criticised on several grounds: on the basis of the classical texts themselves, and on the comparative evidence of sociology and anthropology. Hence the reticence which ancient historians have in talking about "trade" in the ancient world, with all its modernist overtones.

This trend was not, however, reflected uniformly within Aegean studies. Bronze Age specialists were slower to feel the effects of such criticisms; and as a result students of the second millennium have been somewhat out of phase from their first millennium colleagues in their reception of these ideas. Most Bronze Age archaeologists still firmly believe in "trade", at a time when Iron Age archaeologists (taking their lead from ancient historians) are most hostile to it. The recent move to re-explore the effects of international trade, in the guise of "world-systems" theory (eg Rowlands, Larsen and Kristiansen 1987), has thus provoked a great diversity of responses: Bronze Age specialists who have never doubted its importance fail to see what the fuss is about, while some second millennium radicals are still importing the minimalist orthodoxy of the first millennium. This larger debate on the nature of early

economies thus provides the background to current disputes on the role of trade in the Bronze Age Aegean.

THE INFLUENCE OF WEBER

Weber's conception of the ancient world as essentially agrarian in its interests was forcefully maintained in the 1920s and 30s by Johannes Hasebroek[1] (trans. 1965), and this view slowly displaced the earlier emphasis on commerce. Although archaeologists such as Blakeway and Woolley emphasised commercial motives in the foundation of Greek colonies in the Geometric period (and Woolley applied a similar model to the Bronze Age), the consensus among ancient historians was that inter-regional trade was relatively unimportant. This view of the ancient economy was formalised by the Cambridge school of ancient historians such as A.H.M. Jones and Moses Finley, and has most recently been summarised by Keith Hopkins, now Moses Finley's successor:

> "Over the last twenty years or so a new orthodoxy has become dominant.... [It] stresses the cellular self- sufficiency of the ancient economy; each farm, each district, each region grew and made nearly all that was needed. The main basis of wealth was agriculture. The vast majority of the population in most areas of the ancient world was primarily occupied with growing food....The scale of inter-regional trade was very small." (Hopkins 1983, xi).

In recent years this attitude has been further strengthened through the effects of the New or Processual school of archaeology, which was especially hostile to vague overseas "influences" on such basic matters as social organisation, preferring instead to follow Weber's agrarian agenda and examine the organisation of the countryside through programmes of field survey. These tendencies can be summed up under the labels of autonomism in matters of cultural development and minimalism in matters of external trade.

An important influence on both these bodies of archaeological and historical opinion has been the substantivist school of economic anthropology associated with the work of Karl Polanyi (with whom Finley had taught at Columbia), which brought a fresh infusion of "primitivist" anthropological thought (Polanyi, Arensberg and Pearson 1957)[2]. The growing realisation that the kinds of economies studied by ethnographers could not be interpreted within the framework of economic thought developed for recent capitalist societies led to an emphasis on the social context of material transactions: the economy was "embedded" in a social matrix, and only slowly became differentiated as a separate domain. In simple societies, goods were typically exchanged as gifts - either reciprocally or through the medium of chiefly redistribution. Such ideas were applied by Polanyi and his colleagues not only to ethnographic examples but to the Aztecs, the Assyrians, and the Minoans. Just as 19th century "modernising" ancient historians saw the ancient world through the mirror of the commercial sea-empires, so the new primitivists now saw it in the ethnographic mirror of New Guinea and Polynesia. Polanyi argued that market behaviour was a late feature, dependent on the use of money; reciprocity and redistribution were for a long time the chief mechanisms by which goods were allocated. Thus trading activity such as that of the colonies of Old Assyrian merchants in Cappadocia was interpreted in terms of administered trade at fixed prices, rather than commercial enterprise; Minoan palaces became primary exemplars of redistributive systems. Neo-evolutionary anthropology took these ideas as the fundamental stages of development between

tribal societies based on reciprocal exchanges, chiefdom societies based on central redistribution, and early states[3].

While archaeologists and ancient historians dealing with the Near East have largely rejected Polanyi's interpretations as based on a misunderstanding both of the archaeological evidence (the absence of actual market places) and of the texts (the myth of a "temple economy"), such ideas nevertheless continue to be influential in the Aegean. Short-distance, redistributive, exchanges are seen as more important than the long-distance movement of goods. So, for instance, at a recent conference on **Problems in Greek Prehistory**, Paul Halstead (1988) presented a sketch of how views of Aegean Palace civilisation had developed - beginning with the images of Victorian imperialism, through a realisation (from Polanyi via Sahlins and Flannery) of the importance of redistribution in managing specialised production of vines and olives (Renfrew 1972, Ch.15), to his own view of the palace as a social storage system, buffering society from unpredictable fluctuations. On this model, the palaces' role in trade was restricted to "undocumented exchanges taking place on an irregular or opportunistic basis, through which finished craft goods were either exported as 'guest gifts' in return for raw materials... or distributed internally for less exotic commodities including pottery and pulses." Inter-regional exchanges thus appear as essentially epiphenomenal.

The importance of trade and long-distance contacts in explaining the nature of Greek civilisation in the pre- and proto-historic periods is thus one which has progressively diminished over the last half century. To a large extent this has been due to the influence of Weber and the tradition of German historiography and classical scholarship, mediated through a variety of direct and indirect influences. While this experience has been a salutary one, in exorcising anachronistic modernism, it has too often resulted instead in replacing it with an equally anachronistic primitivism. Moreover this minimalist view is increasingly at odds with the evidence provided by archaeology. While there is no reason to return to a world of colonial powers and thalassocracies, it is equally absurd to explain the quantity of Mycenaean pottery in the Near East, or the acquisition of regular supplies of metal in the Aegean, simply in terms of gift exchange. It is time to formulate a coherent alternative to both.

AN ALTERNATIVE AGENDA: THE ROLE OF CONSPICUOUS CONSUMPTION

Weber's ideas, and particularly his views on the origins of capitalism, have come to dominate large parts of the social sciences. Nevertheless there is an alternative view, most clearly articulated by his contemporary (and co-editor of the **Archiv für Sozialwissenschaft und Sozialpolitik**), Werner Sombart; in many ways, the two form a polar contrast. Weber emphasised the uniqueness of the modern western economy, setting it against those of the ancient world and the Orient. He saw a crucial turning-point in the 16th century with the emergence of the 'Protestant ethic' and its emphasis on individual rationality and accumulation. Sombart saw a more generalised process of change, fuelled by the kinds of conspicuous consumption which were characteristic of the medieval church and the aristocracy: hence the widespread view that he "backed the wrong horse" by choosing Catholicism. Sombart saw the activities of the Jews in early medieval Europe as exemplifying entrepreneurship and rational calculation of profit; Weber dismissed this as "pariah capitalism". The contrast can be summed up by saying that Weber placed the emphasis on the supply side of economic relationships, and especially on staples and commodity production, while Sombart (echoing the insights of the American sociologist Thorstein Veblen) stressed the importance of

demand and consumption patterns on the movement of a greater variety of goods (Weber 1958, 1963; Sombart 1967, 1969).

Sombart's approach lies behind a new interest by economic anthropologists in material culture. This school asks the question: why do people want goods? (Douglas and Isherwood 1980, Appadurai 1986). Consumption has both a practical and a social aspect. Material goods are an essential part of cultural structures of meaning and symbolism, which can be used in social strategies of recruitment and exclusion and so form an important component of social change. Items such as fine metalwork or perfumes are not just luxuries but embody concepts of value and purity which have a power which is more than just a consequence of their relative scarcity[4]. The well known Christmas hymn, written by Prudentius in the 4th century and translated by E. Caswell, puts the point appropriately:

> Solemn things of mystic meaning:
> Incense doth the God disclose,
> Gold a royal child proclaimeth,
> Myrrh a future tomb foreshows.
> **English Hymnal** (OUP, 1933), No. 40.

Material culture and artistic taste are more than just a gloss on agrarian production (Bourdieu 1984); this view shifts the emphasis to quality rather than quantity, and the values implied by the word "civilisation" (*cf.* Elias 1978).

What, then, is the nature of the civilising process? How are small-scale, tribal societies transformed into players in an international game? Weberian, production-oriented models - and in this we may include the ecological models of processual archaeology - emphasise increase in the scale of production, the rise of local market centres, and structural differentiation. Rather than looking to advances in agrarian production, however, and the organisational relationships which result from them and allow trade, the Sombartian, consumption-oriented, point of view looks at the *incentive* to trade: the desire, on the part of a minority, to acquire goods which have these kinds of social significance. The goods themselves acquire such significance as parts of social practices, like the *symposion* in the classical Greek world, or the customs of burning incense or anointing the dead, which give the material elements their meaning: and in the case of Greece these practices were often acquired from older civilisations to the east. Bronze Age Greece was not just engaged in material exchanges with the Orient: it was absorbing also the language of ostentation and display, in architecture, food and drink, clothing, and bodily appearance and smell (Lilja 1972; Faure 1987; Reinhold 1970).

We can thus resolve something of the contradiction between the Jones-Finley model of the ancient economy and the archaeological evidence for inter-regional contacts. The quantities of goods which moved over long distances were undoubtedly small in relation to total production: but their importance was out of all proportion to their bulk, for it was the need to acquire supplies of valued materials which motivated the intensification of local production and the extraction of surplus, in order to provide goods for exchange. Moreover the process was a dynamic one, for it set in train an expanding need for consumer goods through a proliferation of centres and competitive emulation between them. Thus what began as the provision of small quantities of luxury items grew to encompass a larger scale of supplies and the local production of commodities for export.

CAPITAL, ORGANISATION AND EXPERTISE

This has important implications for the way in which we approach early trade.

Minimalists (eg Hopkins 1983, xi) have argued that since the Mediterranean is a relatively homogeneous environment, there was little scope for inter-regional trade: each region can grow similar crops. This criticism only carries weight, however, within a Weberian framework where staple commodities are the focus of interest. From a Sombartian viewpoint, the resources which were traded were culturally defined, and it is the small quantities of highly significant and valued materials that are of primary interest. Archaeologists are frequently tempted to analyse the early economy in terms of the complementarity of natural resources: the exchange of X for Y, whether grain for livestock, or oil for copper. Within an already advanced economic system (the Aegean in the 14th century BC for instance), such specialisation in primary production may indeed occur; but in the initial stages such direct complementarity over long distances is unlikely, since to be worthwhile it involves transportation in bulk. A more fundamental reason for long- distance trade is the relationship between manufactured products and raw materials.

The distinction between a manufacturing core and a supply zone for raw materials goes back to the genesis of urban systems in the fourth millennium BC. Raw materials in the form of stone, metal, timber and wool flowed into Mesopotamia from a wide catchment area. The agricultural surplus of Mesopotamia was not exported directly, however (*contra* Kohl 1978), but in the form of labour-time in the manufacture of finished goods, especially textiles (Adams 1974). The complementarity between the areas involved in this trade was not just one of materials, but of unequal degrees of complexity, expertise, and labour-time: in a word, of organisation, and of investment. That is why the system was capable of expansion, and why it spread outwards to take in new areas, in a spatial multiplier effect (*cf.* Jacobs 1969).

Aegean civilisation was not simply the result of ecological micro-diversity resulting from the domestication of tree-crops and the emergence of the 'Mediterranean triad' (Renfrew 1972) wherever its cultivation was practicable; otherwise why did the Bronze Age economy not emerge in parallel throughout the Mediterranean? (Lewthwaite's question of 1981: "Why didn't civilisation emerge more often?"). Vines and olives formed part of a cultural and ideological package as well as a subsistence one, and their cultivation on the required scale required investment and the mobilisation of manpower and capital (see further below). It is these factors which were concentrated at the eastern end of the Mediterranean, and which slowly - during the second and first millennia - spread west.

Bronze Age Aegean societies were, indeed, small and primarily agrarian. But their neighbours in the Levant were considerably more complex in their organisation, and behind them stood the much larger, urban economies of Mesopotamia and Egypt. Even at the height of the Bronze Age, in the 16th-15th centuries BC in Crete and later on the Greek Mainland, there is nowhere in the Aegean which matches the concentrated commercial wealth represented by the storehouses of Ugarit, and the mercantile sophistication which lay behind them (Schaeffer 1949, Pl. 31; Helzer 1978). Nor was the contrast a fleeting one: it was already 2000 years old. The easterners had the gold, the skills, the bulk, the exotic materials, the sophisticated lifestyle, and the investment capacity. Aegean civilisation was undoubtedly culturally independent, in that it retained its own languages and developed its own style; but its growth can only be understood in the context of its interaction with these larger economic structures.

If we ask what was spreading, then the answer can be summarised as consumer

demand. As the catchment area for raw materials spread, so - some distance behind - did the lifestyle and the technical capacity to support it[5]. Participation in long- distance exchanges gave local elites the opportunity to absorb some of the values and practices of the core areas, generating their own raw material requirements and adding a further diversity of finished products to the system. The urban economy was a contagious process, in which the desire for luxuries preceded the production of commodities.

"COLONIES", TRADE MISSIONS AND TRADING DIASPORAS

It would be wrong, however, to conceive this process simply as one of passive "diffusion". Its spread was propagated by the active search for high-value materials required by already advanced areas. Moreover it was one which involved a variety of societies and cultures, at different levels of social and economic organisation. It is these properties which produced the phenomena which have sometimes been labelled "colonies" (and which are perhaps better described more neutrally as "trade missions").

Although the term "colony" carries a number of unnecessary connotations (including ethnic and cultural distinctiveness), the establishment of trading communities in foreign territories at a distance from their homeland is a consistent feature of economic expansion from the fourth millennium onwards. The earliest examples are the Sumerian sites of Jebel Aruda and Habuba Kabira in Syria, and similar sites marked by proto-Elamite tablets in the third millennium in Iran. The extensive network of Old Assyrian merchant communities[6] in the second millennium in Syria and eastern Anatolia - which would be unrecognisable archaeologically without the evidence of texts - has been mentioned above (see Larsen 1987); while the pattern of Greek and Phoenician *apoikiai* in the first millennium is the classic example of maritime "colonisation". The picture is completed by the occurrence of Jewish and Syrian trading communities in early medieval Europe, notably in Greece, southern Italy and the Gulf of Lions (Pounds 1973, fig. 5.8).

These kinds of phenomena have recently been reviewed by Philip Curtin (1984), in a book which discusses not only these early examples but also the ports of trade in west Africa discussed by Polanyi, and the spread of Armenian communities in the early modern period. Such merchant settlements in foreign territories form part of a general pattern of trading missions and diasporas, which are particularly characteristic of cross-cultural trade routes in periods when growing economies tap the resources of surrounding areas at a lower level of economic organisation. They are often the initiative of smaller ethnic or political units on the fringes of more integrated areas, especially where the latter have command economies which lack the entrepreneurial skills required. Such groups are important in providing articulation between larger economies and existing native exchange networks, operating through ports of trade. They typically build up their own network of way-stations and supply points, which may themselves expand to take advantage of local trading opportunities or possibilities for agricultural production (as seems to have been the case with several of the classical Greek colonies). Trading diasporas of this kind are usually a temporary phenomenon, since either the overseas communities grow to achieve an independent status, or their role is taken over by the development of indigenous polities; though ethnically distinctive enclaves may continue to exist (as with the Jews and Armenians) even when trade is no longer predominantly in their hands. Not all such trading diasporas involve ethnically distinct groups, however, and it is important to bear in mind that trade missions resulting in the foundation of merchant settlements may come from areas

of similar language and culture. A good example is the movement of merchants from Cologne spreading into the Baltic to found the settlements which were later to become the towns of the Hanseatic league.

Such phenomena (on a variety of scales) are so widespread that something of this kind is to be expected as an accompaniment to the opening up of maritime trade in the Mediterranean - even if difficult to detect archaeologically because of their often temporary character and lack of a distinctive material culture. Since trading diasporas typically spread outwards from developed into less developed areas, a general pattern of spread from east to west would be predicted. There is no comfort here to those who would see Mycenaean colonies in such advanced areas as Ugarit or Alalakh; but there is every reason to expect phases of temporary overseas settlement in a series of westward diasporas as trading networks grew.

THE CONDITIONS OF NAVIGATION

The nature of Mediterranean civilisation was strongly affected by the possibilities of maritime trade. The sea linked areas which on a map seem far apart, just as mountainous terrain isolated geographical and political units within the same island or peninsula. The pattern of winds, currents, landfalls and good harbours superimposed a topological transformation on the conventional outline of coasts and landmasses.

These influences had an effect on two levels: in defining a major pattern of routes, and in giving prominence to important landfalls and obstacles along them. The factors affecting maritime routes have been well summarised by Pryor (1988), which should be consulted along with Braudel's classic account (1972). The chief fact to bear in mind is the seasonal and essentially coastal nature of early shipping routes and the regular landfalls they involved. The straight-line routes shown on modern atlases are doubly misleading: not only were the routes indirect ones that hugged the coast, but outward and return routes were often different, since they involved different winds and currents. In consequence the traffic was essentially tramping, with multiple transactions along the route. Even in the Middle Ages, "Only the big specialised grain and salt ships had any resemblance to the destination-conscious shipping of today. The others were more like travelling bazaars." (Braudel 1972, 107). The main areas of maritime trade were the "narrow seas" such as the Aegean or the Tyrrhenian Sea with their indigenous craft, linked by longer distance shipping routes which made large-scale trade possible (Braudel 1972, 108). To these one may add the Levant and the south coast of Anatolia, with the larger bays which then existed in Cilicia and the 'Amuq, together with the island of Cyprus. Within and between each of these, traded goods travelled for the most part over short distances, with many stops and trans-shipments at articulation points between routes.

Navigation over longer distances was a matter of combining a sequence of favourable winds and currents. The prevailing summer winds over the eastern Mediterranean blow from the north-west; travel from this direction was relatively simple. Movement in the opposite direction was difficult, but not impossible: "Ships attempting to sail north and west against the winds could often claw their way along the coasts by using the currents setting in their favour as well as by taking advantage of the daily cycle of morning and evening sea and land breezes, which, close to the shore, predominated over the prevailing winds in some sectors." (Pryor 1988, 15). Along the coastal routes would have been a series of obstacles, preceded by points at which it was necessary to wait for a favourable wind; the site of Troy dominates one such major sheltering-point, at the entrance to the Dardanelles (Korfmann 1986). Boats would often follow

a circular route, with one leg of the journey close to the coasts and the other cutting across more open water. Such cycles would initially have been quite small, although by the Late Bronze Age some larger vessels seem to have been capable of sailing anticlockwise in the circle defined by Egypt, Cyprus, Crete and the Libyan landfall at Mersa Matruh (Bass 1987). Outside this main highway, however, a series of smaller, articulating, cycles (often of independent origin, and in the hands of different carriers) persisted. In many cases it was preferable to unload goods and carry them across an isthmus rather than negotiate a dangerous cape or peninsula[7]. Such trans-isthmian routes, avoiding dangerous capes and long trips around peninsulae, gave a special role to trading settlements located on trans-shipment points. Corinth in later times owed its prominence to such a link between the west and east coast routes, and Mycenae lay on a comparable but rather longer route between the Corinthian Gulf and the Gulf of Argos (Sherratt 1987, Fig. 5.8). Such factors singled out the sites which were capable of dominating inter-regional trade.

The net effect of these chains of larger and smaller routes was to produce a potential traffic corridor along the Levant and the south coast of Anatolia, with extensions from Rhodes both into the south Aegean and up the west coast to the Dardanelles. From the south Aegean a comparable corridor extended north-westwards via the western Peloponnese to southern Italy and Sicily, giving access to the Tyrrhenian Sea. Along this axis, at a later date, the islands of Crete, Rhodes and Cyprus, were to form the "stationary fleet" of the Venetian empire. "That the sea surrounds the islands and cuts them off from the rest of the world... is certainly true whenever they are really outside the normal sea routes. But when they are integrated into shipping routes... and become one of the links in a chain, they are on the contrary actively involved in the dealings of the outside world (Braudel 1972, 150). It was during the Bronze Age that these potentialities were first actualised, through the initiative first of Egyptian and Levantine traders, then of Cretans and mainland Greeks, until the chain of links ran from the Levant and Cyprus through Crete to Sicily and Sardinia.

THE PRODUCTION AND CONSUMPTION OF COMMODITIES

The formation of trading contacts presented local elites with the opportunity to organise the supply of internationally desirable materials. Where such a local infrastructure could be mobilised, an area on the edge of such an expanding economic network could begin to develop its own productive base from local centres to ensure the further supply of desirable exotica. The following sequence might thus be envisaged:

1) Contact, followed by the provision of high-value, low bulk raw materials, in exchange for a few high-value, low bulk manufactured goods ("luxuries");

2) Some transfer of lifestyle and technology, together with participation, in the form of providing its own high-value, low-bulk manufactured goods;

3) Full linkage, involving the re-structuring of agrarian production to provide bulk materials for local manufacturing processes, and full participation in complex bulk exchanges.

The transition from (1) to (2) can be accomplished through the development of craft skills applied to local materials such as metal, fine stone, ceramics, leather or woodwork that require a concentration of craftsmanship rather than the organisation of large-scale structures concerned with the extraction of a rural surplus. The achievement of stage (3), which requires infrastructural changes, is more difficult for local elites to accomplish: but in the

Mediterranean region this transition was facilitated by the nature of the local crops.

Duo sunt liquores, says Pliny[8], *humanis corporibus gratissimi*: there are two liquids most pleasing to human bodies - *intus vini, foris olei*, wine inside and oil outside. Both were fundamental to the practices which formed part of the civilised lifestyle. Vines and olives were crucial to the developed Mediterranean economy because they could provide desirable manufactured products as well as raw materials: they could absorb the added value of labour to produce not only wine and oil but quality wine and special oil. Similar considerations apply to the cultivation of spices and aromatics (saffron, coriander, sage) and potential narcotics (opium), as well as to fruits such as figs and pomegranates, and also to animal fats for ointments and fish for *garum* and fish sauces. (Olives were basic to several of these other products too, since all perfumes and many flavourings were oil-based). Additional labour inputs had a direct effect on value; and it is the central concentration of production in an attempt to monopolise this added value (rather than just the distribution of specialised agricultural products) which lies at the heart of the palace system. It is not just the storage areas which mark out palatial centres as economically important, but the workshops and manufacturing area which surrounded them (Fig. 1).

Of equal, if not more fundamental, importance to the reproduction of this system was the manufacture of textiles, both of linen and wool, which were similarly capable of absorbing added value. Wool-bearing sheep were, like tree-crops, an innovation of the Bronze Age, and wool was not necessarily the universal commodity which it was later to become. In addition, local weaving traditions and technologies could give an advantage in an international market through the production of distinctive local specialities. Elizabeth Barber (in press 1990) has emphasised the advantage of the Aegean and Anatolia in their traditional use of the vertical loom, which was capable of producing large weaves in complex patterns. This industry was certainly established on Bronze Age Crete, and its cloth was highly valued in Egypt where the chief textile was plain linen made on the horizontal loom. Supporting the cloth industry were ancillary industries of fulling and dyeing, which themselves required considerable sophistication for instance in the production of much-prized purple and other colours, and required the acquisition of very specific ingredients.

Not only do all these commodities absorb value, but they are of direct relevance to the self-definition of emerging elites through conspicuous consumption and display. The production of all these commodities required capital and access to exchange networks capable of distributing them: and it was to the advantage of the elite that the added value should be monopolised through the concentration of manufacturing in centres rather than in farms or villages. Such a system always contained the potential for conflict, and was dependent both on religious sanction and - in the last resort - on force.

It is characteristic of such a system that even where large numbers of people are involved in the productive process, consumption is limited to a minority (even if, over time, this minority expands to include those who can only emulate the style rather than the substance of the truly wealthy). This has very important implications. The centres cannot be modelled as market centres, for the elite commodities so produced are not to be redistributed or marketed to the general population: they are for elites either at the point of production or at comparable centres elsewhere - but in any case not in the immediate peasant hinterland. Some form of non-local "trade" (often, though not

necessarily, international trade) is therefore fundamental to this kind of production, since there is little effective demand from the local peasantry. The civilised lifestyle is limited to an exclusive and self-defined elite. Even in medieval Europe,

> "The middle and upper classes also accounted for an important segment of the demand for clothes fabrics and other furnishings. This was before the day of mass markets for inexpensive, coarser textiles, and the spinners and weavers catered much more to the desires of the wealthy: 'finery' is not for the common people." (Roehl 1972,20).

Sic vos non vobis mellificatis apes: civilisation is dependent both on inter-regional trade and on the labours of those who do not participate in the consumption of the products which are traded.

THE ROLE OF PRECIOUS METAL

An inter-regional exchange system involving a complex mosaic of local production requires an element of liquidity. Regular supplies of highly specific materials cannot be ensured on a reciprocal basis: the network of exchanges needs to be balanced at each stage by some commodity which is generally acceptable and can be both stored and adventitiously converted into different materials as occasion demands. This requirement is filled by metals, especially precious metals.

Before such a store and standard of value was formalised as coinage, precious metals were exchanged by weight. It is significant that scale-balances appear as signs both in Linear A and B, and actual examples are known in the Aegean at least by the 16th century, in the Shaft Graves and early tholoi (Vandenabeele and Olivier 1979, 156-60). The adjective *atálantos* (equal in weight) is a common Homeric term with a Bronze Age background (Watkins 1987). For an elite concerned with the movement of high- value materials, the notion of equivalence by weight is fundamental; and the wealth stored as plate, weapons and ornaments (including the added value of expert manufacture) represented a convertible reserve of value which could be mobilised for exchange - as well as being used in the conspicuous consumption of wine! The absence of surviving precious metal vessels from Crete (with the sole exception of the silver kantharos from Gournia) is no indication of the absence of such items from palatial tables: since the pottery indicates a considerable influence of silver models, it is rather an indication of the extent to which it was retained in circulation and mobilised when necessary.

The Shaft Graves, from a relatively brief phase of ostentatious burial associated with the establishment of ruling dynasties on the Greek mainland, give a brief glimpse of a dimension of the archaeological evidence that is otherwise unrecorded. To redress the balance, it is salutary to note the complementary record of Egyptian tomb-paintings and royal reliefs. The relevant representations date to the XVIIIth dynasty, in the Theban tombs of royal officials depicted as receiving deputations from the *Keftiu* such as Senmut, Rekhmire and Menkheperresonb. Although the representations are highly formalised, they depict a range of items, some apparently of Aegean origin, in which precious metal vessels form a predominant part, along with bolts of cloth, copper ingots, and other items[9], which indicate the types of commodities which (albeit on rare occasions) were assembled from parts of the Aegean and the east Mediterranean. There is no reason to suppose that such items were not also a component of more regular, shorter-distance

exchanges within the Aegean itself - as demonstrated by exotic items in the Shaft Graves.

Even these concentrations of wealth pale into insignificance, however, when set beside the record of booty from Tuthmosis III's campaigns in the Levant, as recorded in the dedication relief in the temple of Karnak: an archaeological snap-shot of a vanished sphere of circulation. The relief itself (Fig. 2), which is divided into nine registers graded by materials, provides an ethnotaxonomy of relative scales of value which ranges from gold at the top, through silver (note the 52 silver Canaanite jars!) and semi-precious stones to bronze[10], and with copper and fine stone containers for ointments at the bottom. It is noteworthy that this almost logarithmic scale of values only touches at its base the kinds of bulk consumable commodities discussed in the previous section (and even those are in alabaster containers); the implication is that relatively tiny amounts of precious metals would have balanced considerable flows of organic goods and other commodities.

Such quantities of precious metals were undoubtedly concentrated in the older urban heartlands of the east Mediterranean, but it is worth asking whence their supplies were obtained. Gold was obtained primarily from Nubia, and silver in Anatolia (Liverani 1987, 68,73; Larsen 1987, 50-52)[11]; but such high-value materials would have moved over very long distances across the entire inter-connected system, from a variety of sources. Net flows of bullion over long periods are a constant feature of inter-regional economies, and it is likely that the Aegean featured from the beginning of the Bronze Age onwards as a producer of silver, mainly by cupellation of lead, for a larger consuming area further east. The connections between Crete and Byblos, and the Tôd treasure, indicate the possibility of such movements on a significant scale in the early second millennium. Although rarely discussed, since the archaeological evidence is so indirect, transactions involving precious metals would have been a prime element of the Aegean Bronze Age economy.

An important implication of this is that while there is likely to have been a *net* flow of bullion across the system, *individual* items (especially where they had the added value of fine craftsmanship) are likely to have had very erratic individual life-histories: the types of precious metal vessels used in elite exchanges (*Prunkgefässe*), such as those shown in XVIIIth dynasty Theban tomb-paintings, could have circulated for a long time among different owners in several areas. (Note for instance the Anatolian appearance of vessels such as the stag-rhyton from the Shaft Graves - discussed by Stos-Gale and Macdonald in this volume - at an even earlier date.) The attempt to identify distinctively Cretan forms among the "tribute" of the *Keftiu*, for instance, may be a hopeless task, since such types were probably already to some extent internationalised over an area covering Crete, south-east Anatolia and the Levant. Individual pieces could have moved over this whole area, in either direction (or both), between a series of linked palatial centres; while the metals of which they were made may have had an even more chequered career between smelting, manufacture, re-melting and further fabrication, and final deposition.

The inter-regional trade in base metals was also a crucial component, since these materials satisfied a highly elastic demand: bronze not only fulfilled the needs of conspicuous consumption and display (often as a substitute for precious metals) but also occupied an increasingly strategic role as a material for weapons; and this required the movement of large quantities of metal. In consequence the need to obtain supplies of

copper was one of the determinants of large-scale patterns in inter-regional trade, with a potentially complex set of competing regional interests and local production strategies aimed at maintaining links with important sources. Tin was equally essential for such uses, and its relative rarity would have given it a value perhaps comparable to silver[12] as an item moving over long-distances and the subject of international diplomacy.

TRANSPORT, DISTRIBUTION AND THE GROWTH OF REGIONAL SPECIALISATION.

By comparison with the high costs associated with land transport, the movement of goods by sea was far cheaper. Although this imposed powerful constraints on the timing and direction of movements (as discussed earlier), sea traffic was important both for exploration - the formation of trading diasporas - and for the quantities of goods which it became possible to transport when large-scale production was established. It is this factor, together with the characteristics of its crops, which gave the Mediterranean its prominence in the three millennia from 1500 BC to AD 1500 - a geopolitical importance only superseded by the development of maritime trade in the Indian Ocean and the Atlantic.

Water transport (initially by river) was an important element in the growth of urban systems on the Euphrates and the Nile, where the sail was first employed in the fourth millennium. During the third millennium both areas developed the capacity for sea transport, which replaced earlier overland supply routes: shipping in the Persian Gulf carried commodities previously supplied from highland Iran, and the Byblos route took over from the land route running parallel to the coast to southern Palestine (the *via maris*). The latter connection gave the Egyptians access to timber from the Lebanon, and also familiarised Levantine coastal communities with the design of sails and rigging. The combination of plentiful supplies of timber with this new technology gave coastal communities on the east Mediterranean seaboard an important advantage; and it was the maritime tradition that was created there which grew to include southern Anatolia and the Aegean.

This coastal traffic was important in the distribution of organic commodities, as is indicated by the development of a class of specialised pottery containers: the variety of small juglets and bottles which indicate the emergence of specialised local products recognisable by their distinctive packaging. It is a characteristic of these Bronze Age organic commodities (by comparison with 1st millennium practices) that they were "bottled at source", rather than being made up from varied ingredients as they were in later times (for instance at entrepots such as Corinth and Rhodes). These types of container, which appeared in the Levant long before their equivalents arose in the Aegean, indicate a measure of complementary specialisation in production based on differences in local ecology, expertise, and access to maritime outlets. Egypt was an especially important consumer of such Mediterranean products, since its climate was mostly unsuited to growing the basic crops, and it had access to a different suite of exchangeable items - a complementarity that was reinforced by the differential movement of silver and gold. Syro-Palestinian jugs and flasks suitable for oils, syrups and resins had reached Egypt in some quantity during the third millennium, and the proliferation of standardised forms of packaging after 2000 BC is indicative of the degree of regional specialisation in organic production made possible by sea transport.

Comparable forms of standardised transport containers were not manufactured in the Aegean until the mid-second millennium. Before the Late Bronze Age, exports from that region consisted largely of smaller

quantities of high-value materials such as silver or craft goods of metal and fine stone. Some of the first closed pottery shapes suitable for the transport of organic commodities, such as alabastra for ointments, were themselves translations of stone forms. The first standardised pottery forms with a clear primary purpose as organic transport containers for liquids are the stirrup jars, which began in Crete in the 16th century (and on the Mainland in the 15th century) in a range of medium sizes, and later diversified into both smaller and larger versions, particularly in the 14th and 13th centuries. The earlier forms were largely distributed within the Aegean. In the 14th century the Mainland forms reached the Near East in large numbers as containers for a distinctively Aegean product, probably a perfumed oil. (The production of cloth for export, which is less easy to demonstrate archaeologically, seems to have begun considerably earlier in Crete). By the 14th century Aegean industries were well integrated in inter-regional and international trade, and the mobilisation of an agrarian surplus and its transformation into a quality manufactured product required a considerable bureaucratic organisation.

Sea transport also made it possible for pottery to be traded in its own right, especially from regions such as Cyprus and the Aegean where it continued to be made in more attractive traditional styles than the utilitarian, mass-produced forms which predominated further east. Although of relatively low value by comparison with other commodities, these wares seem to have gained in value outside their areas of production and were apparently sufficiently distinctive to be traded (perhaps as acceptably exotic substitutes for more expensive metal or stone vessels for a wider sub-elite) along with other, intrinsically more valuable, items as a cost-effective use of spare capacity on ships needing space-fillers for part of a journey. Minoan Kamares ware could have reached the Levant and Egypt in this way, just as Cypriot wares were carried to the Levant along with copper (Artzy 1985b, 137). Exported pottery, however, was often subject to imitation or displacement by local painted wares such as Nuzi ware or Palestinian bichrome (Artzy 1985a), in a process of import substitution. Perhaps as a spinoff from the growing investment in ceramic containers, and also reflecting the increased consumption of wine by a wider sector of society, pottery was increasingly produced in forms which acted as substitutes for metal drinking sets. By the 14th century, specialisation in pottery production on the Greek Mainland reached the stage at which specific designs of fine wares were made primarily for export (Sherratt 1982), and containers may even have been made in one area to be filled in another. Although pottery was rarely an important commodity of trade on its own, its archaeological visibility makes it a useful surrogate for more valuable but less easily traceable items of trade; and it is evident that the changing patterns of pottery supply in the Aegean and the east Mediterranean were responsive to "commercial" pressures of competition and imitative substitution (Davis and Lewis 1985; Artzy 1985a).

BULK PRODUCTION AND ECONOMIES OF SCALE

The movement of goods by sea allowed certain areas to achieve a further degree of regional specialisation, involving the transfer of commodities in bulk rather than in small quantities in value-added form. Such an increase in the scale of production and transport is indicated archaeologically by the appearance of two particular forms of bulk commodity units: the oxhide ingot for metals and the large amphorae known as Canaanite jars for organic commodities. Although only copper ingots survive in any number, Egyptian tomb-paintings and the examples

from Ulu Burun indicate that the same forms were also used for silver and tin. The distribution of any form of metal artifact is subject to strong selective bias in preservation, as discussed above for precious metals; and ingots only enter the archaeological record in the relatively unusual circumstances of religious dedication, forced abandonment or catastrophic loss - notably at sea. Nevertheless the occurrence of oxhide ingots as far west as Crete by the 16th century and as far as Sardinia by the 13th or 12th century (apparently correlated with a shift from a possible Anatolian to a Cypriot source of bulk production: Gale, this volume) is an indication of the extent to which sea transport permitted regional specialisation in the bulk production of relatively high value commodities over an area of this size.

Since organic commodities were of lower value than an equivalent volume or weight of metals, the use of bulk containers such as Canaanite jars specially designed for sea transport (and even pithoi, as Ulu Burun has revealed) indicates an even greater degree of specialisation in production, paralleled by the transport of manufactured semi-products such as glass and resins (Grace 1956; Parr 1973). As the westward spread of amphora production in the Phoenician, Greek and Roman world of the first millennium demonstrates, such containers are good indicators of the extent to which urban economies are capable of moving primary agricultural and marine products[13]. Roman amphora studies make clear that such bulk containers were largely restricted to movement by sea and major rivers: they were commonly made and filled at specialised "canneries" near the coast, and their contents often promptly transferred to other sorts of container on arrival at the port - most spectacularly at the entrance to Rome itself, where their discarded remains form the hill of Monte Testaccio (Mattingley 1988). It is not surprising, therefore, that in the Bronze Age such a scale of production was restricted to the east Mediterranean. Although a few Canaanite jars were imported to the Aegean in the 16th to 13th centuries, there is no standardised local equivalent of comparable ubiquity, size or function. Only a few of the large coarse amphoroid jars of the New Palace period in Crete, or the large coarseware stirrup-jars of the 13th century, show some increase in capacity over earlier forms.

This contrast in the size of containers between the Aegean and the east Mediterranean is echoed in the distribution of stone anchors. Before the use of iron-tipped bar-anchors in the first millennium, stone anchors were a necessity for large transport-ships; and they thus form one of the diagnostic artifacts of Bronze Age maritime archaeology. By comparison with the massive sizes and quantities of these artifacts recovered in the east Mediterranean, however, very few are known from the Aegean - despite active searching. Most of the reported finds occur in Crete, and none at all are known from the Gulf of Argos, for instance. The size of ships known to have been operating in the east Mediterranean in the 14th-13th centuries has been calculated as reaching at least 225 tonnes (McCaslin 1980, 101), and it is likely that the stone anchors of that area reflect the presence of vessels of considerably greater tonnage than those operating in the Aegean. (These questions have been illuminatingly considered by Artzy: 1985b). In that case, the co-occurrence of stone anchors and Canaanite jars at sites such as Kommos, for instance, would indicate break-of-bulk points marking the limit of large-scale marine transport, where commodities from further east were transferred to smaller vessels for regional distribution. This accords well with the picture of large and small navigation cycles presented earlier, with large vessels operating on the main shipping lane between the Levant

and Crete and trans-shipping their products where this route articulated with other cycles. A rather different pattern may be discerned in the post-palatial period (from the 12th century onwards), when smaller and more manoeuvrable vessels may have operated on both sorts of routes and over longer distances.

AN ORGANISATIONAL CONTRAST?

This difference in scale between the Aegean and the east Mediterranean raises the question of whether their economies were different in kind as well as in size. Such a question returns to the problems with which this paper began: do Polanyi's models work for Aegean Bronze Age economies, even if they have been discarded further east; or are they simply inappropriate for Bronze Age urban societies in general?

Such organisational questions are heavily dependent on the use of textual evidence, and cannot easily be solved by archaeology alone. It is important to bear in mind, therefore, that comparable sorts of evidence are not necessarily available from the two areas. It is remarkably fortunate that so many Mesopotamian records were written on clay (though many were not, as Stephanie Dalley reminded us), and that the Egyptian climate is sufficiently arid to preserve papyrus. The use of organic writing media such as parchment or wood in areas such as the Aegean and Anatolia would preserve no such corpora, and the temporary records on accidentally baked clay tablets and other inscriptions that remain from these areas, although valuable, are not necessarily representative of the whole range of recorded transactions. Even those that luckily survive as a result of conflagration offer only a partial snapshot of individual sectors of the economy, in possibly atypical circumstances. Negative evidence is therefore largely inadmissible; the absence of documents concerned with external trade is no evidence of its unimportance.

Bearing this difference in mind, we may first remark that the "palace economies" of the Aegean fall within the general class of contemporary economies in the Near East, which were also palace economies in the same sense of the term. Although temples formed important and partly independent sectors in areas where irrigation agriculture was practiced (ie southern Mesopotamia and Egypt), the combination of palace, religious centre and manufacturing and trading establishment was typical of the towns of Syria, Palestine and northern Mesopotamia. If the Aegean differed, it was in the close combination of these functions within a single institution rather than in their partial differentiation; and in their relatively smaller scale. These differences are not surprising, given the comparatively peripheral location of the Aegean in relation to the main arteries of movement of traded goods. The Near Eastern centres were primarily responsible for the mobilisation of raw materials, storage and manufacturing, and were the main consumers of finished products. Although their rulers maintained diplomatic links and exchanges of "presents" (which themselves included highly specific requests for what should be given in return), much of the regular movement of commodities over long distances was in the hands of independent merchants operating within the framework of these diplomatic links, and subject to taxation by the palace. Even where they were not directly responsible for its day to day operation, the palaces depended for their existence on regular external trade, and often attempted to monopolise it.

The same may be said for the palaces of the Aegean. Killen (1985) has noted that the procedures for the mobilisation of goods recorded in the Linear B tablets find their best analogies in contemporary Near Eastern practice. The archaeological evidence clearly

shows that some of the finished products were exported, both within and beyond the Aegean, in return for traded goods and raw materials. These external transactions were not recorded in a medium that has survived, or has so far been recovered; though this is no reason to doubt the importance of this trade. It is possible, given the less developed nature of the Aegean economy, that the bulk of these exchanges were conducted primarily by the palaces themselves. This may well have been the case with eastward transactions in the 15th century, which potentially included rare expeditions to Egypt itself. The increasing scale of foreign links in the 14th and especially 13th centuries is likely to have given a more important role to independent carriers, perhaps in areas such as the Cyclades, though with some of the revenue being retained by the palaces. This entrepreneurial activity was given further scope by the collapse of palace monopolies, which changed both the geography of trade and also to some extent the nature of the goods that were carried.

Polanyi's picture of a "redistributive economy", espoused by Finley, is thus misleading if it is taken to imply the predominance of a local agrarian base, and a primary role for the palaces in the provisioning of their hinterlands. The palaces were essentially exploitative, and their incentive to gather produce was to retain and increase its value rather than to supply the peasantry with its benefits. Finley was correct, however, in pointing to the relatively centralised character of Bronze Age palatial trade, by comparison with the private mercantile enterprise which grew up alongside it and eventually superseded it. This development occurred in parallel between the Aegean and the Near East: the Late Bronze Age crisis of the 12th and 11th centuries was the crisis of a single system.

A SUMMARY OF THE MODEL

The model which we are proposing depends on the concept of contagious process, while allowing considerable scope for local actors; it moves from high-value, low bulk items ("luxuries") to standardised, quantity production ("commodities"), whose mobility is made possible by inter-regional bullion flows; this general exchangeability successively penetrates local economic structures from the top downwards and extends the scope of local commodity production and specialisation.

Long-distance exchange networks were already active by the time that the first direct contacts were made with the Aegean; and the existence of this inter-regional dimension was a crucial element in the emergence of centralised polities there. The opening up of the Mediterranean was primarily due to stimuli arriving by sea. The use of a maritime technology based on the sail allowed the existing regional exchange networks to be partly linked into a common system of circulation, capable of transmitting high-value goods (notably metals, and especially silver) between participating units, and providing a channel for the dissemination of technological novelties. The early Cretan centres of the Middle Bronze Age thus replicated many of the characteristics of Levantine ones, both structurally and in terms of common forms of cultural practice and shared elite signifiers: indeed, there is a sense in which the whole of the eastern Mediterranean area, from Crete to the Levant, played a common role in the larger economic system of the early second millennium. This pattern was complicated, from c. 1600 BC onwards, by the emergence of the Greek mainland, Hittite Anatolia, and the island of Cyprus as increasingly independent players with separate regional interests, and by the subsequent extension of direct Egyptian and Hittite control into the Levant. The Late Bronze Age thus brought a new scale of activity, and a degree of political and military intervention, into the

arena of east Mediterranean maritime trade; and this expansion of the scope of centralised, palace-centred economies carried with it the seeds of its own collapse.

AN HISTORICAL PICTURE

While it is useful in general terms to speak of a "Bronze Age economy", it will be evident from the above discussion that the system went through several changes of scale and character, and was in a continuous process of transformation. It therefore has to be considered as a dynamic, historical sequence; and it is to this chronological dimension that we now turn in order to set these observations in an appropriate context. Although this account is presented as a series of stages, these should be regarded as no more than convenient divisions of a continuously evolving pattern.

2500-2000: the later pre-palatial Aegean: The Early Bronze Age Aegean, like the rest of the Mediterranean, experienced a growth in population and a transformation in its subsistence base as a result of the introduction of secondary agriculture. Small-scale exchange cycles linked the islands of the Cyclades with the east coast of mainland Greece, Crete, and western Anatolia, in a series of short-haul canoe routes (Renfrew 1972; Broodbank 1989). These indigenous exchange systems provided a flow of materials that could be tapped by more advanced economies further east.

A major feature of the third millennium in the eastern Mediterranean was the emergence of local polities in the Levant and Syria, as a result of the opening up of trade routes by Egypt and Mesopotamia (Marfoe 1987). These secondary states included major centres at Byblos and Ebla, which both supplied raw materials from a wider hinterland and added their own manufactured goods. Ebla in particular, located between the Euphrates and the Syrian coast, operated a palace economy whose transactions were measured in quantities equivalent to thousands of textiles, tens of thousands of sheep, tons of silver, hundreds of kilos of gold (Pettinato 1981). It conducted diplomacy with Assur and Mari, and received "tribute" in precious metals from some 17 smaller centres, apparently including Kanish in east- central Anatolia. This area, including the Cappadocian polymetallic zone with its deposits of silver, ?gold, tin and copper, was a crucial resource area which could be reached from metropolitan Syria via the Orontes, the Bay of Iskenderun, and Cilicia. It is in this corner of the north-east Mediterranean that indigenous maritime exchange cycles, with the benefit of local timber and Egyptian sail technology, would have been amplified by articulation with the large scale economies of secondary states, and pioneered longer routes which ultimately reached the Aegean.

Already by the later third millennium the Near Eastern economy had moved from bronze to silver as a standard of reference and a means of payment[14]. It is no coincidence that this period sees a particular interest in silver in Anatolia (including silver cupel-buttons from Mahmatlar and the silver ingots from Troy II: eg. Prag 1978, 36, 40), and reflected in Aegean grave finds and in the mining of silver-rich lead on Siphnos (Gale and Stos-Gale 1981) and the extraction of silver by cupellation. This corresponds to a more general extension of Anatolian metallurgy in the Cyclades and south-east mainland Greece, in which Troy seems to have occupied an important position potentially intermediate between Aegean and southern Black Sea routes, with echoes in Euboea, the Cyclades and the Argolid (Stos-Gale, Gale and Gilmore 1984, Doumas 1988, Gale, Stos-Gale and Gilmore 1985). A rather more specific, directional, trade seems to lie behind the extension of maritime routes along the south Anatolian coast (indicated by the

spread of wheelmade red-cross bowls) and to the importation of small items of faience, ivory and carnelian in Crete. It is not implausible to see a north Syrian or Cilician initiative in moving small quantities of craft goods - perhaps in a series of relays - into an area of active local trade capable of supplying desirable materials for manufacture and consumption in the larger-scale economies of the north-east Mediterranean. The small quantities of Early Minoan pottery and metalwork in northern Cyprus (Warren and Hankey 1989, 115) would mark one of the steps along the way. This fits well with the first evidence for masted vessels on EM III seals. The concentration of imported finds, along with evidence of the craft production of fine stone and metalwork in gold and silver at Mochlos, has led Branigan to describe this site as a "gateway community" for eastern Crete[15]. Cretans, in their turn, seem to have established some sort of trade mission in Kythera - probably for access to specific raw materials used in their craft industries such as purple dye, or stones such as *rosso antico* and *lapis lacedaemonius* from nearby Laconia. For Crete, this would correspond to stage (1) of the model.

2000-1700 BC:

The final years of the third millennium saw a recession in Egypt and a shift of economic activity in Mesopotamia towards the Persian Gulf, with a temporary slackening of trade in the Syro- Palestinian area (Possner 1971, 532 f; Lloyd 1978, 138; Kohl 1987, 16; cf. Larsen 1987). As the Gulf trade diminished, however, at the beginning of the second millennium, Mesopotamia's western neighbours experienced a resurgence of economic and political life which made increased demands on neighbouring areas. First Assur and then Mari showed a renewed interest in access to raw materials; Assur via the Upper Euphrates to Kanish and central Anatolia, Mari - through the series of Syrian states which succeeded Ebla - to the north Mediterranean coasts (Larsen 1987). Byblos, too, flourished as a result of renewed Egyptian contacts, especially in Dynasty XII, introducing Egyptianising elements into Syrian iconography and the kinds of small trinkets carried by north-east Mediterranean trade; and Ugarit became a major entrepot between these regional systems (Gerstenblith 1983). This renewed economic activity stimulated the formation of new political units on the major supply lines, leading ultimately to the emergence of Hattian/Hittite centres on the Anatolian plateau, and to the palaces of Crete (cf. Larsen 1987, 53 ff).

Cilicia[16] and Crete emerged as centres of organisation within the south Anatolian maritime axis, which probably still involved a long chain with many intermediate stops (for instance in northern Cyprus). Characteristically for the early development of a long-distance route (*cf.* Chaudhuri 1985, Maps 8 and 9), it showed little interstitial development: the intermediate points show little evidence of organisational complexity. References in the Mari records show that western manufactured goods reached this area, and that tin was forwarded to a "Caphtorite" merchant at Ugarit. It may be that the ethnonym *Kaptaru/Keftiu* which now begins to appear in Semitic and Egyptian records refers generally to peoples engaged in trading on this route (cf "Phoenician" or "Viking" in later times), rather than specifically to Crete as it apparently did in the Late Bronze Age. Whether Cretans actually reached east Mediterranean ports at this stage or not, the island now seems to have acted as a major focus in funnelling materials towards her own manufacturing centres and outlets, and exporting the products eastwards. Its catchment expanded to include a large part of the southern Aegean, including the mainland and south-west Anatolia, and Cretan trade missions may have been responsible for the occurrence of MM pottery in these areas. If the north

Aegean trading cycle between east-central Greece and north-west Anatolia continued, it showed no increase in scale comparable to that observable in the south: indeed, the MH period on the mainland is often seen as a time of relative recession.

This concentration of economic activity is reflected in the appearance of the first Cretan palaces. Several locations in central and Eastern Crete, including Knossos, Phaestos, Zakro and Mallia, emerged as manufacturing and storage centres and points of articulation between transactions conducted with the mainland (especially Attica and the Saronic Gulf) along the "western string" of Cycladic islands - exchanging local manufactures for silver and copper (Davis 1979; Gale, Stos-Gale & Davis 1984). Tin and perhaps gold from the east could have purchased larger quantities of such Aegean silver, which together with small quantities of fine stonework and Kamares ware vessels (not containers for organic products) travelled back, to appear within the maritime trading circuit in northern Cyprus, the Levant and Egypt. Craft manufactures such as faience developed, and the proliferation of loom-weights suggests that textile-making may also have begun to contribute to the class of exportable goods. There is little evidence for the movement of processed agricultural products at this time, however, and this period in Crete would thus correspond to stage (2) of the model; other parts of the south Aegean would still be at stage (1).

1700-1400 BC:

The next three centuries witnessed an increase of scale and tempo, with the corresponding friction of growth. The routes established in the preceding period provided the main arteries of trade, but the size of the supporting hinterland increased, new centres of power emerged, and areas of political control were enlarged. In the Near East the Mitanni occupied the crucial area of the Syrian saddle linking the Mediterranean to Kassite Babylon, with competing pressures from north and south by expanding Hittites and Egyptians. The expansion of Egyptian control over the Levant, following a period of Levantine ascendency over northern Egypt in the Hyksos period, demonstrates the economic importance of this area. Cyprus developed indigenous centres of power on the southern coast, facing the prosperous maritime cities of the Levantine littoral such as Byblos and Ugarit; peninsular Greece, rather more rapidly, underwent a similar process in relation to Crete and the southern Cyclades, at the other end of the maritime trading zone.

With the New Palace Period, Crete entered stage (3) of the model, in which agricultural production was integrated with manufacturing and export activity. This is seen both in the proliferation of country villas (some with oil presses) and small towns, and in the appearance of pottery containers such as large amphoroid jars and jugs, and early stirrup-jars. These testify to the scale of local production of (probably perfumed) oil, at first consumed largely within the Aegean. Cycladic bird-jugs may have been used for wine, and alabastra and pyxides for ointments - perhaps based on animal fats (lanolin?). Craft industries also developed further in scale and intensity, and among these textiles seem to have been particularly important. Other longer distance exports included elaborate stone vases and the silver forms echoed in pottery; imports included Egyptian stone (as well as stone vases; Warren this vol.), occasional Cypriot and Canaanite vessels and their contents, trachyte mortars, and oxhide ingots of copper (perhaps coming through Cilicia). Cyprus was already supplying copper, and supplementary goods in pottery containers, to Syria and the Levant (Larsen 1987; Gerstenblith 1983, 70 *ff.*; *cf.* Muhly 1986); Rhodes emerged as an important entrepot between Aegean and east

Mediterranean maritime systems, perhaps visited both by Cretan (or Cycladic) and Ugaritic vessels (Portugali & Knapp 1985, 52 *ff.*). Although the main axis of these exchanges was along the south Anatolian coast, the appearance of *Keftiu* in Egyptian tomb-paintings of the first half of the 15th century would appear to indicate that some diplomatic trading missions from Crete made the direct voyage to Egypt before returning anti-clockwise up the Levantine coast to Cilicia or Cyprus and Rhodes. (Egyptian goodwill was worth cultivating, for this was the time of Tuthmosis III's effective re-conquest of Palestine, and his accumulation of the booty recorded on the Karnak relief.)

This new scale of maritime trade drew products from a larger northern hinterland, promoting development in the Cyclades and on the Greek mainland. Two areas in particular became important as nodes within a wider network of supply routes. Messenia, in the western Peloponnese, was important in the exploration of westward routes to Italy (cf. Dickinson 1977, 55). Greek trading missions made contact with Tyrrhenian exchange systems at ports of trade in the Aeolian Islands and Vivara (see most recently Jones and Vagnetti, this volume) - much as Syrians must have done in the Aegean a millennium earlier, and as other Greeks were to do in Italy nine centuries later, on the adjacent island of Ischia. Native canoe-borne trade could be articulated with longer-distance routes based on the sail. These led to the west coast of Greece, and potentially also - via the Corinthian Gulf and overland through Nemea - to the Argolid and the southern Aegean. The Argolid, the second area to rise to prominence, was also the point of contact with a second set of routes, used since the third millennium, north-westwards across the Aegean to Troy and the entrance to the Black Sea. Here, again, local exchange cycles could give trade missions access to materials supplied from the metal-rich areas of the lower and middle Danube catchment. This vast new hinterland supplying the growing economy of the south Aegean explains the sudden burst of wealth evident in the early Mycenaean Shaft Graves, with their gold, amber, and other exotic imports (Sherratt 1987).

The political consequences of this enlarged scale of activity were to create new, expansive power-centres on the edges of the system, which sought to achieve in-dependence and extend their control over the centre. A parallel process took place in Anatolia, with the expansion of the Hittites (and perhaps also in Syria and Mesopotamia with the Mitanni and the Kassites). In the Aegean, the result was a gradual extension of mainland trading activity in competition with Cretan centres and Cycladic middlemen; culminating, in the mid-fifteenth century, in a Mycenaean takeover of Crete itself and the establishment of a major realm at Knossos, ruthlessly exploiting the wool and oil production of its dependencies. The details of this process are well documented in the Knossos tablets (Killen 1985), and the quantities leave no doubt that much of the production must have been manufactured for export on a comparatively large scale.

1400-1200 BC:

These two centuries are somewhat arbitrarily separated from the preceding phase, and mark the climax of the palatial trading system and the political frameworks within which it was carried out. In this period the Hittite empire expanded to take over the crucial maritime trading areas of Cilicia and north Syria, creating a common frontier with the Egyptian empire in the Levant. This border remained relatively stable, but shifted progressively southwards, from the Orontes mouth to Byblos, as the Hittites gained more cities on the east-west land artery of the Syrian saddle. Ugarit was particularly valued as an articulation point between land- and

sea-based trading networks. Cyprus became increasingly prominent as an independent supplier of copper outside these blocs. The Assyrians replaced the Mittanians as the dominant focus of power further east. This balance of power gave rise to intensive diplomatic activity of the kind recorded in the Amarna letters, involving the massive exchange of "gifts" between ruling princes and potentates (including wives and specialist personnel). Their conventional formulation as moral equivalents conceals a strong element of rational calculation, however embedded in political considerations. Goods also circulated as taxes and tribute within and between states, and through a network of private commercial transactions partly under palatial protection and regulation - for instance bilateral agreements about the treatment of merchants, since trade routes inevitably passed through several different adjoining polities. Palaces sought increasingly to maintain control of private trade, though were not always successful in doing so (Zaccagnini 1987; Liverani 1987; Foster 1987; Helck 1987); and such processes were probably also operating in the Aegean as well as the Near East.

The palace centres of mainland Greece, and especially the Argolid, were now the core of the Aegean economy. Craft production of faience and ivory demonstrates the use of a common international style, reflecting common elite tastes and perhaps the exchange of specialist artisans (Peltenburg, this volume) between centres in the east Mediterranean and Aegean region. The palace centres controlled the industrial production of goods both for internal consumption and export, including commodities specifically destined for eastern markets such as some of the so-called 'Levanto-Helladic' specific pottery shapes produced in the Argolid. The Pylos tablets give detailed information about the manufacture of perfume and linen and woollen textiles, which no doubt accompanied such wares. Drinking sets and containers, probably filled with ointments and perfumed oils, were exported particularly to Cyprus, and from there to the Levant, and containers for organic products such as stirrup jars also reached Egypt in small but relatively uniform batches. Decorative motifs in Amarna art show the influence of Aegean textiles (Barber 1990). Political factors are evident in these distributions: there is relatively little Aegean material from areas under Hittite control, such as Cilicia. Occasional pieces of Mycenaean pottery, probably tracers for a few other more valuable goods of Aegean derivation, nevertheless circulated in indigenous exchange cycles, as far as Spain in the west and the southern Black Sea coast (Martin de la Cruz 1988; Mee 1978, 132 f.).

The role of Crete, now fragmented into a series of small polities, seems to have been one which was largely peripheral to this mainland economic focus; its main products at this time seem to have been raw commodities rather than fine, value-added materials. West Crete in particular supplied olive oil to the mainland in large, coarse stirrup-jars, sometimes inscribed. Certain ports, however, such as Kommos, advantageously placed in relation to the longer inter-regional routes, continued to flourish independently and perhaps relatively free of political control from established palace centres. The diversity of imports at this site, from the mainland, Cyclades, Cyprus, Levant, and Italy, demonstrate its nodal character (Watrous 1985). The comparably international range of material from Mersa Matruh, 300 km west of the western Delta, offers a complementary stopping point on the major anti-clockwise route to Egypt and the Levant. Kommos would thus be an articulation point between large-scale east Mediterranean circulation and the Italian routes. Trade with Italy and the Tyrrhenian

sea intensified (Vagnetti, this vol.), with a particular impact in the south where local elites and the production of Aegeanising pottery (Jones, this vol.) indicate related regional developments including the appearance of a complex administrative building at Thapsos in Sicily, which has Cypriot pottery in the nearby tombs. In the 13th century the older route through the Straits of Messina was apparently replaced by one along the southern coast of Sicily and up to Sardinia (where finds both of Aegean and Cypriot pottery occur at Nuraghe Antigori) with its important metal sources and local contacts further west (Vagnetti, this vol.). Italy in the 13th century was particularly important as a contact point between the Aegean and central European metalworking traditions, signalled by finds of types such as the winged axe, violin-bow fibula and *Griffzungenschwert* in the Aegean and east Mediterranean (Harding 1984, 165).

Cyprus in this period underwent a major phase of urbanisation, with substantial towns and administrative centres emerging where routes from the copper-belt around the edges of the Troodos reached the sea, as at Enkomi, Kition and the other centres on the south coast. As well as producing oxhide ingots, these now had the manufacturing capacity to create added value through the production of finished goods such as bronze bowls, mirrors and tripod stands. In the 13th century they also began an imitative substitution of imported Mycenaean pottery by local production in a wheelmade "Mycenaeanising" style (especially for drinking sets[17]), which was itself exported along with other Cypriot and genuine Mycenaean products to centres such as Ugarit and Byblos in the Levant[18]. All this indicates a considerable degree of economic integration and competition between regional economies.

Between the Aegean and the east Mediterranean, Rhodes was another articulation point between large-capacity routes and smaller cycles. Its culture was Mycenaean, but it received materials from the east as well as forwarding goods from the Argolid and south-west Anatolian centres such as Miletus. Some eastern material (including Cypriot pottery) travelled northwards up the west Anatolian coast to reach Troy - still important for access to the (?metal) products of the Black Sea region, and perhaps thus comparable to contact points in Italy.

This period represents the climax of bulk maritime trade in the Bronze Age. It differs from the 15th century pattern in the disappearance of Cilicia and Crete as major centres in their own right, and in the emergence of Cyprus as a major international trader. The *Keftiu* trading axis was replaced by a major system of circulation, perhaps centred in Cyprus and Syria, working the large anti-clockwise cycle and articulating with Aegean routes at entrepots in Crete, Rhodes and Cyprus. Mainlanders seem not to have reached Egypt and the Levant in the way that Cretans appear formerly to have done: Aegeans disappear from Egyptian tombs, and there are no Mycenaean names at Ugarit, although merchants from Alashia are now mentioned in Egyptian records (Wachsman 1987). The system thus seems to have differentiated into two components: a major long-distance international route, marked by port towns and emporia such as Tell abu Hawam, Ugarit, Enkomi, Ialysos, Kommos, and stations like Mersa Matruh, and operated by big ships with large cargoes (like the Ulu Burun ship), heavily capitalised and partly state dependent; and a series of cycles operated by long-distance ships of smaller capacity[19] in the west, some controlled from mainland centres but many under less centralised control.

The distribution of desirable forms of

decorated pottery vessels and containers merely acts as a tracer for the routes followed by more important materials - textiles, bulk organics, massive amounts of copper, materials such as tin and glass, and the consequent flows of gold and silver. The Ulu Burun wreck can be used to calibrate the terrestrial record and restore some of the lost wealth to its skeletal archaeological remains. It also indicates the concentration of valuable items that moved by sea, and the complex interdependence of elites in different areas served by maritime trade.

Not all this activity, however, should be imagined as the peaceful growth of commerce. Factors of international competition are evident in the insecurity in the Levant revealed by Amarna letters and in Hittite attempts in the 13th century to divert Ahhiyawan ships from Amurru. Egypt and the Hittites clashed at Kadesh in 1284. Tension also occurred between the monopolistic interests of the palaces and the private activities of merchants. More insidious, perhaps, was the growth of mobile populations - both inland and coastal - beyond the direct control of centralised polities (Liverani 1987). Vessels in transit were especially vulnerable to attack, and their valuable cargoes were an invitation to the growth of piracy. In between the core areas of major states were interstitial areas of less complex organisation, whose inhabitants were denied the direct benefits of centralised trade and had much to gain from predation. Coasts such as Lycia, and islands along and around the main trade routes, possessed small mobile ships capable of attacking the larger less easily manoeuvrable cargo vessels at vulnerable points on their voyages as well as conducting small-scale tramping trade. The growth of such "sea peoples"[20], parallel to the camel-riding "Habiru" and Aramaean tribes in the hinterland of Levantine land routes, posed a particular threat to monopolistic palace centres and their trade. The accounts of attacks and destructions by the "peoples of the sea" which occurred in the late 13th century were intimations of the imminent collapse of the kind of centralised inter-regional trade which had characterised the Bronze Age.

1200 - 1000 BC:

While these two centuries are still reckoned as Bronze Age in the Aegean, they are already conventionally the first phase of the Iron Age in the Near East. Although this periodisation reflects a genuine lag in the transition to iron technology (itself related to the disruption of bulk copper supplies), the parallelism of events in the two areas needs to be stressed. What emerged at this time was the unfettered growth of the kinds of decentralised maritime trading activity which had grown up alongside monopolistic palatial systems in the previous centuries: this explains the paradox of the simultaneous collapse of the palatial system and the growth in certain kinds of long- distance trade.

The collapse of large-scale inter-regional trading systems began in the most heavily capitalised areas, and its effects reached outwards to involve all the palace economies which were dependent on them. The large scale folk movements once envisaged for this period on the basis of textual references and archaeological finds can be better explained as two related phenomena: the employment of mercenaries by competing states, and the growth of opportunistic trading in small vessels by interstitial and peripheral groups. These two ways of life were closely related; and the loss of power by established centres also released dependent populations and allowed new configurations of economic activity. These heterogeneous maritime activities are reflected in a widespread shift of settlement to the coasts in the 12th century (very evident in Greece and Cilicia), and a new kind of sailing in little ships now using more manoeuvrable vessels (with brails

rather than a boom: Basch 1987) that could sail closer to windward and carry fewer rowers. These are the vessels shown in the Medinet Habu reliefs of the "Peoples of the Sea" in Year 8 of Ramesses III, c.1186. Such little ships, engaged in the kind of trading and raiding attributed to the Homeric Phoenicians, were able to penetrate into the east Mediterranean and undercut the routes sailed by larger and more heavily capitalised vessels. Their sailors were sometimes employed by the Egyptians as mercenaries, and they were also capable of taking the initiative in attacking established trading centres and sacking their cities.

The small scale trading which was part of such activities probably explains the appearance for instance of small quantities of Northwest Anatolian grey wares in Cyprus in the late 13th century, and at Ugarit shortly before this centre was permanently destroyed some time around or shortly after 1200 BC, along with neighbouring Atchana and Carchemish. The recession in Syria which followed these destructions had further effects on the Hittite heartland, as economic difficulties exacerbated local unrest, leading to the destruction of Bogazköy itself at this time. The Assyrians under Tiglath Pileser I (c. 1100) took advantage of this unstable situation to invade Syria and the Levant, before the shift of power to semi-nomadic Aramaean tribes caused a fundamental decentralisation of local economies (and, incidentally, a new set of inland routes made possible by use of the dromedary). In Cyprus, insulated both from political interference and pressure from pastoralist populations, cities such as Enkomi and Kition rebounded from destructions from the sea, and indeed took over some of the role of mainland centres like Ugarit. They were probably important in maintaining trade with the coastal strip of southern Palestine, where sites in the Philistine coastal strip like Ashdod and Tell Miqne show a comparable intensity of industrial production and economic activity in the 12th century, and close cultural connections with Cyprus (Dothan & Gitin 1990)[21].

Cyprus also played a leading part in the continuation and expansion of trade with the west. The Aegean core region suffered from the disruption of centralised trade in the east Mediterranean, and the Mycenaean palaces were themselves successively destroyed or disappeared as administrative centres. The collapse of centralised power produced a new pattern of small-scale diversified trading (Sherratt 1982), and also removed any remaining political obstacles to the penetration of private traders from the east Mediterranean. In this new pattern of contacts, the Aegean reverted once more to a predominantly peripheral role in relation to Cyprus and the east, and its manufacturing capacity was reduced mainly to the provision of lower value goods for local use. What was sought were high-value raw materials, chiefly silver or tin, either in Greece itself or on a larger scale further west. The removal of the palaces and the resulting growth of diversified, multidirectional maritime networks around and across the Aegean resulted in a greater participation in long-distance trade than before - even if lower in volume. Such long-distance routes were still made up of many individual links, and required way-stations where local products could still find an outlet. Those parts of the Aegean which benefited most from this development were those which had valuable raw materials to offer, or those areas which were accessible from the major east-west sea lanes or were stopping points along them - a pattern which was to continue in the early first millennium (Coldstream 1982). These places with an international role are picked out by the occurrence of pottery from further east: both eastern Aegean wares from Crete and the Dodecanese, and Aegeanising[22] wares from Cyprus and its neighbours, as well as more

recognisably Cypriot objects (including metalwork).

In Greece itself the cemetery at Perati, close to the argentiferous lead deposits of Laurion, contains significant quantities of Cypriot imports (including jewellery, iron knives and cylinder seals), while nearby sites on the island of Salamis and along the shores of the Euboean Gulf and the Euripos also seem to flourish at this time. This might argue for a particular interest in silver[23]. The main landfalls along the direct east-west route, however, were in Crete, western Greece and the Ionian islands, then on to sites like Scoglio del Tonno near Taranto. Much the most spectacular evidence for such West Mediterranean contacts comes from Sardinia, where again the objective is likely to have been high-value metals. In return, Cyprus was exporting bronzework and even copper ingots (Gale, this volume), which occur, often in fragments, in hoards of local metal products[24]. (This pattern of deposition, which is responsible for the number of recorded finds, is characteristic of the kinds of indigenous uses of wealth typical of other parts of Bronze Age Europe, and probably indicates that Sardinia was at the beginning of stage (1) of our model of participation.) The articulation between long-distance maritime routes and European exchange networks in the 12th century is perhaps more clearly indicated by the important site of Frattesina in the Po valley, linked both to central Europe[25] and (via the coastal Adriatic network) to international Mediterranean trade. It produced glass and transmitted northern amber (including the type of beads found - along with a Cypriot rod-tripod - in the Tiryns treasure) and possibly a particular type of comb represented by an example from Enkomi (Vagnetti 1986), while receiving exotic items such as (unworked) ivory and ostrich egg. A lead ingot may also indicate some involvement in silver production, which would help to explain these distant contacts.

This picture closely resembles the pattern which is familiar from the early first millennium BC, when it is associated with the Phoenicians and the extension at that time of these types of activity into the west Mediterranean. At the period in question, however, it was Cyprus which formed the pivotal link and centre of consumption in the east Mediterranean. The question of when Phoenicians *sensu stricto* began their maritime expansion has to be set within this larger framework. The link between Cyprus and Sardinia was a continuing feature of this long-distance maritime trade; but it underwent a brief recession in the 11th century with the dislocation of existing Cypriot settlement patterns (Iacovou 1989), and the disappearance of large industrial and administrative installations, possibly coinciding with an influx of Greek immigrants to the island. Port towns like Hala Sultan Tekke fell out of use and Enkomi was abandoned for a new centre at Salamis[26]. This corresponds with the gradual breakdown of the Levantine coastal trading community[27], under pressure from inland states.

The system was revitalised by the development of the spice route to western Arabia, bringing both gold and incense by caravan and by ship along the Red Sea in the 10th century (Liverani 1987). The revived south Levantine coastal trading centres like Sidon remade the link with Cyprus, though now as the dominant partners, and so gained access to traditional Mediterranean routes to the Aegean (Lefkandi, Knossos) and beyond[28]. This was the beginning of the pattern of Phoenician colonisation and the opening up of the western Mediterranean. This new, pan-Mediterranean scope of maritime trade demonstrates the potential of entrepreneurial activity, freed from the political constraints of Bronze Age systems of palatial control. On a larger scale, and on a faster timescale, the east Mediterranean again initiated a contagious process of economic growth.

CONCLUSION: THE NATURE OF BRONZE AGE TRADE

"The market came with the dawn of civilisation and is not an invention of capitalism". This timely intervention, in a speech by President Gorbachev in June 1990, summarises many of the conclusions of this paper. "The market" in this sense must not be confused with the emergence of the small market town, supplying the needs of rural consumers. These local distributive systems were an aspect of later, Iron Age developments: the earliest state societies of the Bronze Age were highly centralised, and led by elite demand. Sir John Hicks (1969, 32) has accurately characterised the nature of the centres which we have been describing: "they should surely be regarded, in the first place, as extended royal households, inhabited by the servants of the King, and the servants of those servants, and the servants of these, to many degrees. There is no doubt, however, that they had markets." Such market behaviour is implicit in the language which most closely expresses the phenomena we have described - demand, added value, investment, competition, import substitution: even if the objects of such trade typically belonged to the "king's people" rather than the peasants. This is the way that ancient economies behaved. Bronze Age economies were, in a sense, "redistributive" (in that they were based on palace centres and personal relationships with the rulers); but they were also market economies, in that their allocative decisions were sensitive to market forces.

The distinguishing characteristic of Bronze Age urban societies is that they began as command economies. Specialised production depended on patronage, within a centralised revenue state. Inter-regional trade was often "inter-regal trade" (Hicks 1969, 31), conducted in the language of gift exchange between kinsmen; but it was capable of mobilising specific kinds of export commodities and obtaining specific goods in return. Moreover it allowed considerable scope for individual initiative on the part of stewards and emissaries, and such mercantile activity was particularly developed on the fringes of the command economy. Royal trade and individual enterprise thus went hand in hand; the Egyptian "tribute" scenes, and the archaeological record of pottery transfers (standing as a surrogate for many other types of goods), offer complementary views of the top and bottom of the system. Together, they provided a mechanism which was capable of fairly sensitive adjustments between supply and demand, and between relative production costs for different commodities.

Growth occurred both by spatial expansion and internal diversification. At the middle of the system, there were gains of merchant profit; at the edges there was a consumer's surplus: but throughout the system the advantages accrued to elites at the expense of dependent or subservient labour. In the long run, the tensions between the monopolistic interests of the palaces and the de-centralised trading of the independent sector came increasingly into conflict, and the growth of de-stabilising elements outside the system (but within its geographical boundaries) brought about its collapse. The immediate beneficiaries were communities where independent trade was able to continue, on the basis of private enterprise. In the longer run, military power imposed new and more integrated forms of command economy, partly dependent on the existence of a few free cities. The palace economy of the Bronze Age gave way to one of two Iron Age alternatives: the territorial empire or the mercantile city state.

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FOOTNOTES

[1]Hasebroek's chief criticism, against the idea that "the ancient state had a commercial policy in the modern sense", was undoubtedly well aimed; but his work is now cited as supporting a generally minimalist position (eg Cartledge 1984).

[2]For useful reviews, see Humphreys (1978, Ch. 2-7); N. Yoffee (1981); Renger (1984).

[3]For a more recent example of this influence, compare M. Sahlins (1972) with Hodges (1982).

[4]The point is well made in **The Admonitions of Ipu-Wer**, a text known from a late copy but believed to have been composed in the First Intermediate Period at the end of the third millennium: "No-one really sails north to [Byb]los today. What shall we do with cedar for our mummies? Priests were buried with their produce [ie of trade] and [nobles] were embalmed with the oil thereof as far away as Keftiu, but they come no longer. Gold is lacking..." (Pritchard 1955, 441).

[5]This is not to imply that the process spreads evenly, as a "wave of advance": on the contrary, it is characterised by extension along routes of contact and the formation of new centres at nodal points of new and existing routes. The late appearance of urban development in Cyprus, by comparison with Crete, can be related to its relative underpopulation, its character as a single, mountainous island rather than part of an archipelago, and its lack of high-value argentiferous ores.

[6]The trade missions to outlying territories exemplified in the Kanish texts often had a family basis, in which a younger son represented the interests of a manufacturing unit in the home centre.

[7]A good example from later times is the importance of Hedeby in Jutland, where the trans-peninsular route linking the Baltic and Atlantic trading spheres in the early Middle Ages avoided the long and dangerous sea route around the north of the peninsula. The higher cost of land transport, trans-shipment, and tolls was justified by the lowered risk.

[8]**Natural History**, XIV, 150.

[9]As an indication of the kinds of goods represented as appropriate for diplomatic gifts or "tribute" (though only rarely reflected in the archaeological record) one may instance the items brought by *Keftiu* in the tombs of Rekhmire and Menkheperresonb: in the former, 25 gold vessels and 8 of silver, 4 silver (or tin) and 6 copper oxhide ingots, silver rings and 3 baskets of mineral blocks; in the latter, 18 gold vessels, 14 of silver and 11 of electrum, and 2 baskets of rings and minerals. These numbers are not to be taken literally; but nor were they simply imagined. Pottery was not part of such transactions.

[10]For comparison one might cite the relative values of 100:9 for the gold and bronze armour exchanged between Glaukos and Diomedes in Homer [**Iliad** vi.234-6]; not to imply that these figures can be extrapolated into the 15th century, but to give some impression of the disparity between noble and base metals.

[11]This is reflected in the relative valuation of silver, which in Egypt was roughly twice as valuable as gold, whereas in Mesopotamia it was a tenth of the value. This disparity was in itself a powerful incentive to inter-regional exchange. In the Aegean, gold is likely to have had a high value relative to silver in the second millennium; though the extent to which Balkan and Transylvanian gold may have entered the system at certain points is an important unknown.

[12]The Ebla tablets indicate a value of 1:1.5 for silver to tin in the later third millennium (Pettinato 1981,198).

[13]It is perhaps worth noting that all these large-scale economies employed slave labour.

[14]Limet (1972, 30): "le cuivre est devenu un métal 'industriel' et a cessé d'être un moyen de paiement ou un métal de référence, ce qu'il était à l'époque précédente; il a été remplacé dans le rôle 'financier' par l'argent".

[15]Hutchinson (1962,100) picks out the locations

of Mochlos, Amnisos, Pseira, Leuke and Dia as suitable harbours for ports of trade. The island of Dia is a particularly tempting analogy for later ports of trade.

[16]Cilicia is unfortunately much less well known archaeologically than Crete.

[17]Notably Rude Style craters, drinking bowls and kylikes (Sherratt, forthcoming). Although Cyprus locally produced some stirrup-jars, and perhaps tried to replicate their contents (oil), it is interesting that it did not on the whole attempt to reproduce piriform jars and alabastra (ointment).

[18]By the late 13th century when Mainland Mycenaean pottery exports to the East Mediterranean may have decreased, a few Cypriot ceramic products had begun to penetrate as far as Tiryns, in the Mycenaean palatial heartland. To this period also belong possible indications of the presence of Cypriot or Levantine traders in the Aegean, such as the "Reshef" figurines and "Canaanite" religious elements such as those of the Phylakopi shrine (Negbi 1988).

[19]These smaller vessels were perhaps already using a new form of sail with brails that is first evidenced in the east Mediterranean with the "Peoples of the Sea": see further below.

[20]The term is used in a structural rather than an ethnic sense; such "peoples" were generated within the eastern Mediterranean area, and do not have to be introduced from outside: although the ranks of freebooters may have been swelled by mercenaries brought in initially to control them, as in the Hellenistic and Roman periods.

[21]In the Philistine coastal strip, and also further north at coastal sites like Akko, Sarepta, Ras Ibn Hani and in Cilicia (now freed from Hittite control) Mycenaeanising pottery very similar to that found in Cyprus occurs at this time. The occurrence of this ware, often attributed to rather nebulous "refugees" from the Greek mainland, should rather be seen as an indication of the industrial and commercial importance of Cyprus (where, by the early 12th century, industrial mass-production of a wheelmade painted ware of Aegean type had expanded from the initially smaller scale import replacement of the 13th century), and as a case of further import replacement where (as at Ashdod) some of it seems to be locally made. These wares simply indicate the central role of Cyprus in an East Mediterranean coastal trading and cultural community in the 12th century, and have no intrinsic ethnic significance.

[22]Such imports may be more common than has hitherto been recognised, owing to the difficulty of distinguishing Mycenaeanising Cypriot wares from local products: this is where more analyses would be particularly helpful.

[23]The prosperity of Salamis and coastal Euboea and Boeotia may also indicate the growing importance of routes westward over the isthmus to the Corinthian Gulf and northwards to the northwest Aegean - another area with potential access to metal supplies. Links in the Axios Valley and the Chalcidice with the South Aegean (first established in the 14th-13th century) continue at this time, and some import substitution of a Mycenaean type of pottery seems to take place (Wardle 1980).

[24]The importance of these ingots, in a relatively underdeveloped prehistoric society, may have lain as much in their status value as imported artefacts as in their usefulness as a source of metal - which otherwise has the character of "coals to Newcastle".

[25]The links to central Europe were important in transmitting technologies such as sheet bronze-working, previously confined to palatial centres, to Urnfield Europe.

[26]Local production of Cypriot-style metalwork seems to have begun in Sardinia at this time (Matthäus 1988).

[27]This was the time of Wenamun's journey from an impoverished Egypt in an unsuccessful attempt to purchase timber in Byblos, by way of a catalogue of minor disasters (Pritchard 1955, 25-9).

[28]By the 9th century the links were sufficiently far flung for an Atlantic Bronze Age bronze spit (*obelos*) to be deposited in a Cypro-Geometric tomb at Amathus (Karageorghis and Lo Schiavo 1989; cf Priego 1986).

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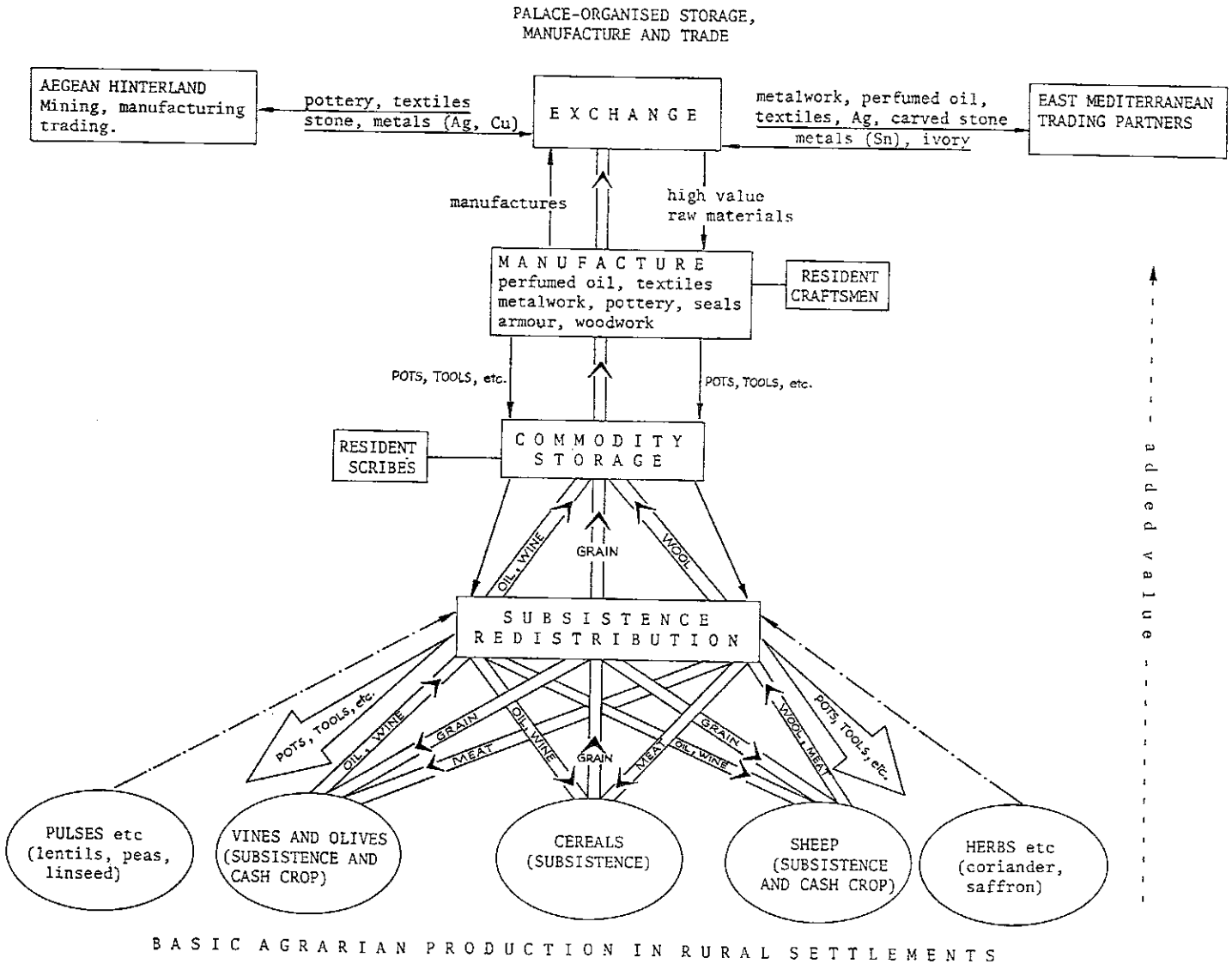

Fig. 1 The structure of a palace economy: diagram of the levels of production, manufacture and exchange in a typical Cretan palace-centred realm in the mid-second millennium BC.

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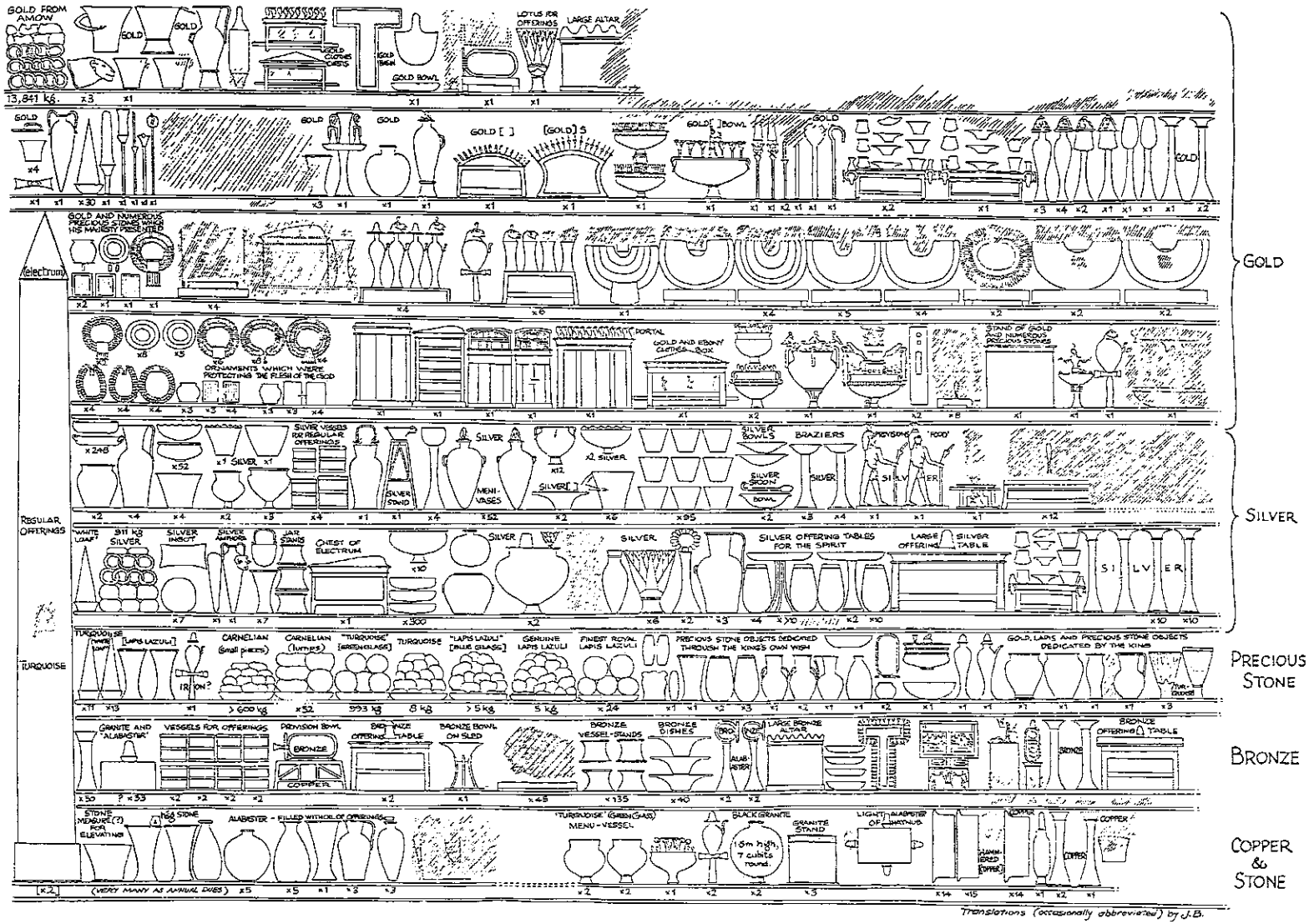

Fig. 2 Tuthmosis III dedicates the booty of his Syrian campaigns; a limestone relief from the Amon-Re temple at Karnak, c. 1450 BC. The goods are organised in registers according to value. Drawing after Wreszinski; translation of hieroglyphic captions after Wreszinski, modified by J. Baines.